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Study on the effectiveness of a dietary supplement containing grape pomace extract and L-arginine for blood pressure control in people with mild to moderate hypertension

Submission date
25/09/2025

Recruitment status
No longer recruiting

Registration date
17/11/2025

Overall study status
Completed

Last Edited
17/11/2025

Condition category
Circulatory System

[_] Prospectively registered
[X] Protocol
[_] Statistical analysis plan
[_] Results
[_] Individual participant data
[_] Record updated in last year

Plain English summary of protocol

Background and study aims
High blood pressure (hypertension) is a common condition that increases the risk of heart disease, stroke, and other health problems. Currently, there is growing interest in safe, natural alternatives that may help reduce blood pressure. This study aims to evaluate whether a food supplement containing a grape seed extract rich in natural antioxidants and L-arginine (an amino acid that helps blood vessels relax) can improve blood pressure control in people with mild to moderate hypertension.

Who can participate?
Adults (men and women) of caucasian ethnicity, aged 18 to 75 years, living in Italy, with a documented diagnosis of mild or moderate essential hypertension. Participants must already be on stable antihypertensive therapy that will not be changed during the study.

What does the study involve?
A total of 296 participants will be randomly divided into four groups:
1. Mild hypertension: one tablet per day of the supplement
2. Moderate hypertension: two tablets per day of the supplement
3. Mild hypertension: one tablet per day of a placebo (inactive substance)
4. Moderate hypertension: two tablets per day of a placebo

The treatment period will last 12 weeks, followed by a 4-week follow-up period without tablets. Participants will have their blood pressure measured regularly. At the start and end of treatment, blood and urine samples will be collected to measure cholesterol, blood sugar, kidney and liver function. Participants will also complete a short quality-of-life questionnaire.

The study will begin after approval by the Ethics Committee and the Italian Ministry of Health. Each participant will be followed for about 20 weeks in total (including run-in, treatment, and follow-up).

What are the possible benefits and risks of participating?
The ingredients of the supplement and the placebo are legally authorised for use in food supplements. No serious risks are expected. Participants may benefit from improved blood pressure control and better quality of life. Participants will be carefully monitored, and any suspected adverse reactions will be reported to the national surveillance system.

Where is the study run from?
The study is being conducted at the COMEGEN medical cooperative in Naples, Italy, under the supervision of Dr Matteo Laringe (General Practitioner).

When is the study starting and how long is it expected to run for?
April 2025 to September 2025

Who is funding the study?
The study is sponsored and funded by NGN Healthcare s.r.l.

Who is the main contact?
Dr Matteo Laringe, comegen@comegen.org

Contact information

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Principal investigator

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Study information

Scientific Title
A randomized, double-blind, placebo-controlled trial to evaluate the effects of grape pomace extract and L-arginine supplementation on blood pressure in individuals with mild to moderate hypertension

Acronym
FLUTAREG

Study objectives
This study hypothesizes that supplementation with a dietary product containing grape pomace extract and L-arginine will significantly reduce blood pressure in individuals with mild to moderate hypertension. The active components, particularly the polyphenols found in grape pomace extract and the nitric oxide precursor L-arginine, are believed to improve vascular function and increase nitric oxide production, which plays a crucial role in regulating blood pressure. By enhancing endothelial function and reducing oxidative stress, this combination is expected to normalize systolic and diastolic blood pressure values over the 12-week treatment period. Additionally, the study aims to evaluate secondary outcomes, including improvements in lipid profiles, kidney function, and quality of life, which are often impaired in hypertensive individuals.

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 29/04/2025, Campania Territorial Ethics Committee 1 (Comitato Etico Territoriale Campania 1) (Via Mariano Semmola 52, Naples, 80131, Italy; +39 081 590 31 11; comitatoetico@istitutotumori.na.it), ref: n° 5/25 of 29/04/2025

Primary study design
Interventional

Study design
Randomized double-blind placebo-controlled parallel-group clinical trial

Study type(s)
Efficacy, Treatment

Health condition(s) or problem(s) studied
Mild to moderate essential hypertension

Interventions
Participants in this study are randomly assigned to one of four groups:
- Group 1: Individuals with grade 1 hypertension (systolic BP 130-150 mmHg, diastolic BP 90-95 mmHg) receive one tablet per day containing 300 mg of grape pomace extract and 200 mg of L-arginine.
- Group 2: Individuals with grade 2 hypertension (systolic BP 151-170 mmHg, diastolic BP 96-105 mmHg) receive two tablets per day of the same formulation.
- Group 3: Individuals with grade 1 hypertension receive one tablet per day of the placebo, consisting of maltodextrin.
- Group 4: Individuals with grade 2 hypertension receive two tablets per day of the placebo.

Randomization is performed using a simple randomization method with a 1:1:1:1 allocation ratio. The treatment groups are blinded, and neither the participants nor the study staff are aware of the assigned treatments (double-blind design). All
treatments are provided free of charge. The intervention lasts 12 weeks, with participants taking the assigned treatment daily.

Intervention Type
Supplement

Primary outcome(s)
Blood pressure measured using sphygmomanometer at baseline, 4, 8, and 12 weeks of treatment, and at the end of the 4-week follow-up period.

Key secondary outcome(s)
1. Fasting blood glucose measured using a blood glucose meter at baseline, 4, 8, and 12 weeks of treatment, and at the end of the 4-week follow-up period
2. Lipid profile (total cholesterol, LDL, HDL, triglycerides) measured using blood sample analysis at baseline, 4, 8, and 12 weeks of treatment, and at the end of the 4-week follow-up period
3. Liver function (AST and ALT) measured using blood sample analysis at baseline, 4, 8, and 12 weeks of treatment, and at the end of the 4-week follow-up period
4. Kidney function (microalbuminuria and creatinine clearance) measured using urine and blood sample analysis at baseline, 4, 8, and 12 weeks of treatment, and at the end of the 4-week follow-up period
5. Quality of life measured using the SF-12 health survey at baseline and at the end of 12 weeks of treatment

Completion date
20/09/2025

Eligibility

Key inclusion criteria
1. Male and female subjects, of caucasian ethnicity, resident in Italy, aged 18–75 years
2. Documented diagnosis of essential hypertension for at least one year before study initiation
3. Ongoing treatment with antihypertensive medications that will not be modified during the study
4. No additional cardiological (e.g., atrial fibrillation, heart failure) or metabolic (e.g., diabetes, dyslipidaemia) comorbidities
5. Ability to understand the study procedures and to provide written informed consent

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Mixed

Lower age limit
18 Years

Upper age limit
75 Years

Sex
All

Total final enrolment
296

Key exclusion criteria
1. Any autoimmune, rheumatologic or vascular disease other than essential hypertension
2. Severe hypertension (grade 3: ≥171/106 mmHg)
3. Diabetes mellitus
4. Irregular sleep/wake rhythm (e.g., night-shift workers within the last 3 months)
5. Total cholesterol >250 mg/dl or triglycerides >200 mg/dl
6. Cardiovascular events (myocardial infarction and/or stroke) in the past 6 months
7. Renal impairment (serum creatinine >1.5 mg/dl) or hepatic impairment (ALT/AST and/or γ-GT twice above normal values)
8. Anaemia (Hb <12 g/dl) or other chronic diseases
9. Habitual intense physical activity
10. Gastrointestinal disorders
11. Body weight variation >3 kg in the 3 months before enrolment
12. Malignant neoplasms
13. Significant neurological or psychiatric disorders, including alcohol or drug abuse
14. Concomitant therapy with: hypoglycaemic agents, laxatives, cyproheptadine, antidepressants, antiserotonergic drugs, phenothiazines, barbiturates, oral corticosteroids, or antipsychotics

15. Pregnancy or breastfeeding
16. Women of childbearing potential not using adequate contraception

Date of first enrolment
05/05/2025

Date of final enrolment
02/06/2025

Locations

Countries of recruitment
Italy

Study participating centre
Comegen-Social Cooperative Society
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Sponsor information

Organisation
NGN Healthcare—New Generation Nutraceuticals s.r.l.

Funder(s)

Funder type
Industry

Funder Name
NGN Healthcare—New Generation Nutraceuticals s.r.l.

Results and Publications

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study will be available upon reasonable request from Prof Gian Carlo Tenore, giancarlo.tenore@unina.it

• The type of data that will be shared: the data that will be shared includes anonymized data related to the primary and secondary outcome measures.
• Timing for availability: the data will be made available upon publication of the study results for a timeless period following publication.
• Consent from participants: the participant information sheet is attached to the present registration, together with the study synopsis.
• Data anonymization: all shared data will be fully anonymized to ensure participants' privacy. This will involve removing all personal identifiers in compliance with the General Data Protection Regulation (GDPR).
• Ethical or legal restrictions: No significant ethical or legal restrictions have been identified at this time. Data sharing complies with ethical approval received from the Campania Territorial Ethics Committee 1 (ref: n° 5/25 of 29/04/25).

IPD sharing plan summary

Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Participant information sheet	version 1.0	14/01/2025	01/10/2025	No	Yes
Protocol file	version 1.0	14/01/2025	01/10/2025	No	No